



## DEPARTMENT OF ENERGY

### 10 CFR Part 430

[EERE-2022-BT-STD-0017]

RIN 1904-AF41

#### **Energy Conservation Program: Energy Conservation Standards for Miscellaneous Gas Products**

**AGENCY:** Office of Energy Efficiency and Renewable Energy, Department of Energy.

**ACTION:** Notification of data availability and request for comment.

**SUMMARY:** On June 14, 2022, the U.S. Department of Energy (“DOE”) published a request for information (“RFI”) regarding energy conservation standards for miscellaneous gas products (“MGPs”). In that RFI, DOE specifically sought stakeholder input and data on a variety of topics including, but not limited to, product categories, energy use, shipments, and technology options. Based on the information that DOE collected in response to stakeholder input, data that has been identified and collected by DOE, and data collected during confidential manufacturer interviews, DOE is publishing this notification of data availability (“NODA”) to provide stakeholders with additional information and to provide an additional opportunity for public input. DOE requests comments, data, and information on all aspects of the NODA.

**DATES:** Written comments and information will be accepted on or before [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*].

**ADDRESSES:** Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at [www.regulations.gov](https://www.regulations.gov) under docket number EERE–2022–BT–

STD-0017. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE-2022-BT-STD-0017, by any of the following methods:

*Email:* [MscGasProds2022STD0017@ee.doe.gov](mailto:MscGasProds2022STD0017@ee.doe.gov). Include the docket number EERE-2022-BT-STD-0017 in the subject line of the message.

*Postal Mail:* Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, Mailstop EE-5B, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 287-1445. If possible, please submit all items on a compact disc (“CD”), in which case it is not necessary to include printed copies.

*Hand Delivery/Courier:* Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, 950 L’Enfant Plaza, SW., 6<sup>th</sup> Floor, Washington, DC, 20024. Telephone: (202) 287-1445. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

No telefacsimiles (“faxes”) will be accepted. For detailed instructions on submitting comments and additional information on this process, see section IV of this document.

*Docket:* The docket for this activity, which includes *Federal Register* notices, comments, and other supporting documents/materials, is available for review at [www.regulations.gov](http://www.regulations.gov). All documents in the docket are listed in the [www.regulations.gov](http://www.regulations.gov) index. However, some documents listed in the index, such as those containing information that is exempt from public disclosure, may not be publicly available.

The docket webpage can be found at [www.regulations.gov/docket/EERE-2022-BT-STD-0017](http://www.regulations.gov/docket/EERE-2022-BT-STD-0017). The docket webpage contains instructions on how to access all documents, including public comments in the docket. See section IV of this document for information on how to submit comments through [www.regulations.gov](http://www.regulations.gov).

#### **FOR FURTHER INFORMATION CONTACT:**

Ms. Julia Hegarty, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies, EE-5B, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: 202-586-0729. Email: [ApplianceStandardsQuestions@ee.doe.gov](mailto:ApplianceStandardsQuestions@ee.doe.gov).

Mr. Pete Cochran, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: 202-586-9496. Email: [peter.cochran@hq.doe.gov](mailto:peter.cochran@hq.doe.gov).

For further information on how to submit a comment, review other public comments and the docket, or participate in the public meeting, contact the Appliance and Equipment Standards Program staff at (202) 287-1445 or by email:

[ApplianceStandardsQuestions@ee.doe.gov](mailto:ApplianceStandardsQuestions@ee.doe.gov).

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## **I. Background**

The Energy Policy and Conservation Act, Pub. L. 94-163, as amended (“EPCA”),<sup>1</sup> authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. (42 U.S.C. 6291–6317) Title III, Part B of EPCA<sup>2</sup> established the Energy Conservation Program for Consumer Products Other Than Automobiles. EPCA also grants DOE authority to establish coverage and prescribe energy conservation standards for additional consumer products. (*See* 42 U.S.C. 6295(l)(1))

On June 14, 2022, the U.S. Department of Energy (“DOE”) published a request for information (“RFI”) regarding potential energy conservation standards for miscellaneous gas products (“MGPs”). In that RFI, DOE solicited information from the public to help DOE determine whether potential standards for miscellaneous gas products would result in significant energy savings and whether such standards would be technologically feasible and economically justified. DOE noted that such information would prove useful in the event DOE moved forward with a final coverage determination. Subsequently, in a final determination published on September 6, 2022 (“September 2022 Final Coverage Determination”), DOE determined that MGPs, which are comprised of decorative hearths and outdoor heaters, qualify as covered products under EPCA. 87 FR 54330.

DOE is publishing this NODA to get additional comment and input on the extensive data that has been collected to date and to help inform DOE as to whether energy conservation standards for MGPs would result in significant conservation of

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<sup>1</sup> All references to EPCA in this document refer to the statute as amended through the Energy Act of 2020, Pub. L. 116-260 (Dec. 27, 2020), which reflect the last statutory amendments that impact Parts A and A-1 of EPCA.

<sup>2</sup> For editorial reasons, upon codification in the U.S. Code, Part B was redesignated Part A.

energy and be economically justified and technologically feasible, consistent with its obligations under EPCA.

## **II. Deviation from Appendix A**

In accordance with section 3(a) of 10 CFR part 430, subpart C, appendix A (“appendix A”), DOE notes that it is deviating from the provision in appendix A regarding the length of comment periods for the pre-NOPR stages for an energy conservation standards rulemaking. Section 6(d)(2) of appendix A specifies that the length of the public comment period for pre-NOPR rulemaking documents will not be less than 75 calendar days. For this NODA, DOE has opted instead to provide a 30-day comment period. In the June 2022 RFI, DOE initiated a review to determine whether potential energy conservation standards would satisfy the relevant requirements of EPCA for miscellaneous gas products. 87 FR 35925. The June 2022 RFI provided 30 days for submitting written comment, data, and information. In light of the previous 30-day comment period associated with the June 2022 RFI, DOE believes a 30-day comment period is appropriate and would provide interested parties a meaningful opportunity to comment on the clarifications, data, and accompanying analyses presented in this NODA.

## **III. Discussion**

This NODA presents various data that DOE has collected to date, through the June 2022 RFI, confidential manufacturer interviews, and other efforts. DOE intends to use this information to help determine whether energy conservation standards for MGPs would result in significant conservation of energy and be economically justified and technologically feasible.

### *A. Scope*

In the September 2022 Final Coverage Determination, DOE established coverage for miscellaneous gas products and codified definitions for “miscellaneous gas products”, “decorative hearth product”, and “outdoor heater” in 10 CFR 430.2. 87 FR 54330.

Specifically, DOE defined “miscellaneous gas products” to mean decorative hearth products and outdoor heaters. Further, DOE provided definitions for both decorative hearth products and outdoor heaters. A “decorative hearth product” means a gas fired appliance that –

- (1) Simulates a solid-fueled fireplace or presents a flame pattern;
- (2) Includes products designed for indoor use, outdoor use, or either indoor or outdoor use;
- (3) Is not for use with a thermostat;
- (4) For products designed for indoor use, is not designed to provide space heating to the space in which it is installed; and
- (5) For products designed for outdoor use, is not designed to provide heat proximate to the unit.

And an “outdoor heater” means a gas-fired appliance designed for use in outdoor spaces only, and which is designed to provide heat proximate to the unit. 10 CFR 430.2.

In response to the June 2022 RFI, several commenters expressed confusion and/or concern related to the scope of a potential MGP energy conservation standard rulemaking.<sup>3</sup> (The American Public Gas Association, National Propane Gas Association, and American Gas Association (“Gas Associations”), No. 8 at p. 2; Hearth and Home Technologies and the Outdoor GreatRoom Company, No. 6 at p. 1; Hearth, Patio, & Barbecue Association (“HPBA”, No. 7 at pp. 3-4) For example, the Gas Associations stated that the June 2022 RFI did not provide enough information to determine which

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<sup>3</sup> The comments received in response to the June 2022 RFI will be addressed in a subsequent rulemaking stage. However, select comments are referenced in this discussion in order to address commenters’ confusion and concerns about the scope of this rulemaking. A parenthetical reference at the end of a comment quotation or paraphrase provides the location of the item in the public record. Specifically, the parenthetical references provide a reference for information located in Docket No. EERE-2022-BT-STD-0017, which is maintained at [www.regulations.gov](http://www.regulations.gov). The references are arranged as follows: (commenter name, comment docket ID number, page of that document).

products would potentially be subject to a future energy conservation standard rulemaking.

DOE recognizes that a wide range of products meeting the definitions of decorative hearth product or outdoor heater (collectively, miscellaneous gas products) are available on the market, including, for example, vented gas log sets, gas fire pits, gas stoves, and gas fireplace inserts. And, while MGPs share similarities in form, function, and operation, DOE also recognizes that the different products that comprise MGPs may have different design characteristics, usage patterns, installation environments, and may offer differing utility for consumers. These factors can significantly influence an analysis of whether potential energy conservation standards would result in significant energy savings and would be technologically feasible and economically justified. In order to both provide more certainty for stakeholders regarding which MGPs would potentially be subject to energy conservation standards and ensure that DOE's analysis reflects the differences between certain types of MGPs, DOE has tentatively identified four distinct groups of MGPs for the purpose of conducting its energy conservation standard rulemaking analysis. The products within each representative group tend to have similar (or in some cases identical) ignition systems and are often certified to the same industry safety standards. The four groups of representative products are:

- Indoor vented gas log sets;
- Other indoor vented decorative hearth products (includes all other decorative hearth products that are not gas logs, including gas fireplaces, gas stoves, and gas fireplace inserts);
- Outdoor decorative hearth products (which includes outdoor decorative fireplaces, fire pits, fire bowls, fire columns, and fire tables); and,
- Outdoor patio heaters (which includes pyramid-style patio torch heaters, radiant patio torch heaters, and infrared heaters).



The first three representative product groups fall under the definition of “decorative hearth product” while the final group meets the definition of an “outdoor heater.” Performing separate analyses on each representative product group will enable DOE to better account for the differences among the products that comprise MGPs.

In addition to the general comments about the scope of potential energy conservation standards discussed in the prior paragraphs, commenters also had comments and questions about specific MGPs. For instance, some commenters requested additional clarity regarding the distinction between outdoor heaters and hearth heaters, especially in cases where a heater has a dual indoor and outdoor certification. (The Air-Conditioning, Heating, and Refrigeration Institute, No. 9 at p. 1; Madison Indoor Air Quality, No. 5 at pp. 1-2). In response, DOE notes that the definition for an outdoor heater requires that the appliance be “designed for use in outdoor spaces only”, and therefore a product that is certified for use both indoors and outdoors would not meet the definition of an outdoor heater. DOE also notes that hearth heaters, which are similar to decorative hearth products except that they are designed to provide heat to the indoor space in which they are used,<sup>4</sup> are not included within the scope of this NODA. Hearth heaters are addressed as part of a separate rulemaking process.<sup>5</sup>

Commenters also sought clarification on whether gas lights would meet the definition of decorative hearth products because they present a flame pattern, are designed for outdoor use (at least), are not designed to be operated with a thermostat, and are not designed to provide heat proximate to the unit. (Hearth, Patio, & Barbecue Association, No. 7 at pp. 3-4) However, DOE has tentatively excluded gas lights from the current analysis due to a lack of information pertaining specifically to these products. Absent sufficient data, DOE has tentatively concluded not to analyze standards for these

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<sup>4</sup> See 87 FR 36249, 36253.

<sup>5</sup> See Docket No. EERE-2022-BT-STD-0018, available at: [www.regulations.gov/docket/eere-2022-bt-std-0018](http://www.regulations.gov/docket/eere-2022-bt-std-0018).

products at this time. Commenters also stated that if products with propane tanks include a continuous pilot, the pilot would not be left on because doing so would drain the fuel tank. (Hearth and Home Technologies and the Outdoor GreatRoom Company, No. 6 at p. 10) DOE agrees that continuous pilot lights are unlikely to be left on for products with propane tanks. DOE has tentatively concluded that portable propane products should not be included in this analysis because there would be minimal energy savings associated with removing standing pilots from these products.

*Issue 1:* DOE requests comment regarding these four representative product groups.

*Issue 2:* DOE requests comment on its tentative decision to exclude gas lights and portable propane products from the current analysis. DOE also requests comment on an appropriate definition for gas lights in order to distinguish them from other miscellaneous gas products, as well as data specific to gas lights. DOE also requests comment on whether any other products should be excluded from the current rulemaking.

## *B. Analysis*

### *1. Market and Technology Assessment*

DOE generally develops information in a market and technology assessment that provides an overall picture of the market for the products concerned, including general characteristics of the products, the industry structure, manufacturers, market characteristics, and technologies used in the products. This activity includes both quantitative and qualitative assessments, based primarily on publicly available information. The subjects addressed in the market and technology assessment include: (1) a determination of the scope of the rulemaking and product classes, (2) manufacturers and industry structure, (3) existing efficiency programs, (4) shipments information, (5) market and industry trends, and (6) technologies or design options that could improve the energy efficiency of the product. In this NODA, DOE presents initial findings from its review of the market and technologies for MGPs, as well as findings related to the design

options that could improve the energy efficiency or reduce the energy consumption of MGPs.

a. Market Assessment

As an initial step in analyzing the market for MGPs, DOE reviewed the market to identify the MGPs currently available and constructed a database of these products that includes information on their characteristics, such as whether the main burner is lit by a pilot ignition system or the main burner is lit directly without a pilot, ignition methods of the pilot (if applicable) or main burner (*e.g.*, electronic ignition, piezo ignition, etc.), pilot light control system (if applicable) (*e.g.*, continuous pilot, intermittent pilot, or pilot on demand), the main burner input rate, and other characteristics. Additional details about DOE's definitions of these features are discussed in section III.C.1.b. of this document. As a starting point in constructing a database for the current analysis, DOE reviewed the list of manufacturers identified in the technical support document ("TSD") for a NOPR for hearth products published on February 9, 2015 ("February 2015 NOPR")<sup>6</sup>. (*See* Docket EERE-2014-BT-STD-0036.) Although the scope of the February 2015 NOPR differed from the scope of MGPs, as defined in 10 CFR 430.2, DOE notes that many of the manufacturers identified for that analysis also manufacture MGPs. DOE collected information on MGPs available from many of these manufacturers from brochures, specification sheets, installation manuals, and other manufacturer literature available on manufacturer websites. DOE also reviewed the Natural Resources Canada ("NRCan") database for gas fireplaces to identify additional manufacturers and models of MGPs.<sup>7</sup>

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<sup>6</sup> On December 31, 2013, DOE published a notice of proposed determination of coverage ("NOPD") for hearth products in the *Federal Register*. 78 FR 79638 ("December 2013 NOPD"). In the December 2013 NOPD, DOE proposed to define "hearth product" as a gas-fired appliance that simulates a solid-fueled fireplace or presents a flame pattern (for aesthetics or other purpose) and that may provide space heating directly to the space in which it is installed. However, DOE later withdrew the December 2013 NOPD in the bi-annual publication of the Regulatory Agenda and the February 2015 NOPR was never finalized. 82 FR 40270, 40274.

<sup>7</sup> NRCan's database of gas fireplaces is available here: [oee.nrcan.gc.ca/pml-lmp/index.cfm?action=app.search-recherche&appliance=FIREPLACE\\_G](http://oee.nrcan.gc.ca/pml-lmp/index.cfm?action=app.search-recherche&appliance=FIREPLACE_G). (Last accessed October 5, 2022.)

Before adding any products from NRCan’s database, DOE first ensured these products are available for sale in the United States. DOE supplemented data from NRCan’s database with data gathered directly from manufacturer websites. Lastly, DOE reviewed retailer websites and conducted internet searches for MGPs to identify any additional manufacturers that were not identified in either the February 2015 NOPR or in NRCan’s database and gathered information on their models. DOE notes that the scope of the February 2015 NOPR was different than the scope of this NODA,<sup>8</sup> and similarly, the definitions and scope of this NODA are not the same as the models listed in the NRCan database, which includes fireplace heaters. Therefore, DOE assessed each model individually and only included models in its database that meet the definition of MGPs. DOE’s product database for MGPs currently includes information on over 3,500 models and 64 brands, but DOE is continuing to research additional manufacturers and models. To provide further context for the MGP market, the following paragraphs discuss the relevant domestic and international manufacturers of MGPs that DOE has currently identified.

The 64 brands of MGPs that DOE identified from its current database were found to be associated with 36 manufacturers. Many of these manufacturers import or privately label MGPs. From this list of manufacturers, DOE has so far identified 19 original equipment manufacturers (“OEMs”) with domestic manufacturing facilities for MGPs sold in the United States. Of those 19 OEMs with domestic manufacturing, 12 offer indoor vented gas log sets; 6 offer other indoor vented decorative hearths; 3 offer outdoor patio heaters; and 16 offer outdoor decorative hearths. DOE understands that many companies are OEM for key products but also source portions of their product offerings.

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<sup>8</sup> The scope of the February 2015 NOPR included “hearth heaters” which are not included within the scope of MGPs.

Publicly available information was insufficient to consistently discern which specific product lines at a company are made versus private labeled.

Based on the DOE-compiled product database, DOE identified the manufacturers in Table III.1. DOE identifies OEMs with domestic manufacturing facilities with an asterisk.

**Table III.1 Manufacturers by Product Group**

<b>Manufacturer</b>	<b>Indoor Vented Gas Log Sets</b>	<b>Other Indoor Vented Decorative Hearth Products</b>	<b>Outdoor Patio Heaters</b>	<b>Outdoor Decorative Hearth Products</b>
Aei, Corporation			X	
American Gas Log, LLC*	X			
Arizona Fasteners Corporation*	X			X
AZ Patio Heaters, LLC			X	X
Cal Spas Inc				X
Crown Verity			X	
Empire Comfort Systems, Inc*	X	X		X
Enerco Group, Inc.			X	
Ferrellgas Partners, L.P.				X
Gas-Fired Products, Inc.*			X	
Golden Blount*	X	X		X
Hargrove Manufacturing Co. *	X			X
Hearth Products Controls Co.*				X
Heatmaster, LLC*	X			X
HNI Corporation *	X	X		X
Infrared Dynamics, Inc.			X	
IR Energy			X	
Island Industrial Services *		X		X
Ksp Group, Inc.*				X
Lava Heat Italia			X	
Lennox*	X	X		X
Lume Fire, LLC				X
Mr. Bar-B-Q Products LLC			X	X
Napoleon Systems & Developments Ltd	X	X		X

Novacap Industries				X
Procom Heating, Inc.*	X		X	X
R.H. Peterson Co.*	X			X
Rasmussen Iron Works, Inc.*	X		X	
R-Co Inc*	X			X
Sólas*				X
Spark Modern Fires, LLC				X
The Home Depot Inc			X	X
The Outdoor Greatroom Company LLP*				X
Travis Industries, Inc.*		X		X
Wayfair Inc.		X	X	X
Well Traveled Imports, Inc.			X	X

\*OEMs with domestic manufacturing

*Issue 3:* DOE requests comment on the OEMs identified for each representative group: indoor vented gas log sets; other indoor vented decorative hearths; outdoor patio heaters; and outdoor decorative hearths. Additionally, DOE requests data on the number of OEMs with domestic production facilities for each group. DOE also requests comment on names of OEMs of MGPs that DOE did not identify in Table III.1.

#### b. Description of Pilot and Ignition Systems Identified on the Market

DOE has identified several ignition system and pilot light technologies available on the market, which DOE has tentatively defined in order to provide a common understanding of these technologies between stakeholders and DOE for the purposes of this analysis.

DOE is aware of the following types of main burner ignition systems:

- *Pilot ignition*, in which the main burner is ignited by a pilot light; and
- *Direct Main Burner Ignition*, in which the main burner is ignited directly (*i.e.* the absence of a pilot light).

Additionally, DOE is aware of the following ignition methods that can be utilized with either pilot ignition or direct main burner ignition:

- *Electronic Ignition*, in which an electronic spark automatically lights the pilot or main burner and which uses line power connection and/or battery power;
- *Push-button Battery Ignition*, in which a spark is manually generated by pushing a button to light the pilot or main burner and which uses energy from a battery to create the spark;
- *Manually-lit Ignition*, in which the pilot or main burner is manually lit using a match or lighter;
- *Piezo Ignition*, in which a piezo material creates a spark to ignite the pilot or main burner without the need for a battery or connection to line power; and,
- *Hot Surface Ignition*, in which a material that is heated through electricity is used to ignite the pilot or main burner.

*Issue 4:* DOE seeks comment regarding whether there are any ignition methods that are not captured in this section, or if any of the listed methods are not applicable to MGPs. DOE also seeks comment on whether the above descriptions for each ignition method accurately reflect the industry's understanding.

Additionally, DOE has observed the following types of pilot lights:

- *Continuous pilot* (or “*standing pilot*”), in which the pilot is capable of burning indefinitely until manually turned off;
- *Intermittent* or *interrupted pilot*, in which the pilot is automatically lit when it is needed to light the main burner, and it turns off automatically once the main burner turns off again or once the main burner is lit; and,

- *Pilot on-demand*, in which the pilot is automatically lit and burns continuously as long as the main burner is operated within a preprogrammed period of time (e.g., 7 days) and the pilot is automatically shut off if the main burner is not operated within the preset time period.

Finally, DOE has found that some products are capable of using more than one of the ignition method or pilot light types described above. For example, DOE has observed products that provide an option to switch between intermittent pilot ignition, continuous pilot ignition, and/or on-demand pilot ignition. However, DOE notes that an MGP with an ignition system that features an option to select a continuous pilot mode, regardless of whether it can also operate in intermittent pilot and/or pilot on demand modes, meets DOE's definition of a continuous pilot system since it is capable of operating continuously until the pilot is manually extinguished. Further, such product would not meet the definition of an intermittent pilot or pilot on demand because the pilot will not necessarily turn off automatically when operating in continuous pilot mode.

*Issue 5:* DOE seeks comment regarding whether there are any pilot light technologies that are not captured in this section, or if any of the listed technologies are not applicable to MGPs. DOE also requests comment about any subsets of MGPs in which it would not be feasible to implement the aforementioned technologies. DOE also seeks comment on whether the above descriptions for each pilot light technology accurately reflect the industry's understanding. Finally, DOE seeks comment on the potential combinations of ignition systems and pilot lights that are available on the market, and on the prevalence of these combinations in each product group.

### c. Technology Options

In its initial review of the market and technology, DOE has identified seven technology options that would be expected to improve the efficiency or reduce the energy consumption of MGPs, which include the following:



- *Optimized air-to-fuel ratio.* The mixture of air and fuel for combustion determines key flame aspects for many MGPs, in particular the flame color, height, and heat output. In order to achieve flame characteristics that mimic wood-burning flames, gas-fired MGPs utilize a “rich” mixture, that is, the ratio of air to fuel is low. For many natural gas products, primary air is in fact not pre-mixed, and what is burned is nearly 100 percent natural gas. This results in a tall yellow flame. For propane products, air is pre-mixed with fuel prior to combustion.
- *Optimized burner port design.* Gas burners for many MGPs comprise tubes with holes or slots through which the gas exits and combusts. The holes or slots are designed with particular sizes and patterns in order to achieve the desired flame pattern or aesthetic. While the primary objective of optimizing gas burner ports is to achieve the desired flame pattern, the ports could also be optimized to deliver an acceptable flame aesthetic while reducing the amount of fuel consumed.
- *Improved simulated log design.* Many MGPs incorporate cement, fiber, or ceramic logs that are designed to simulate the look of wood logs. The log shapes are optimized in conjunction with the burner design. The combination of the burner design and log shape, size, and placement results in the overall aesthetic for the product. Additionally, logs must be designed in conjunction with the burner to ensure that flames do not impinge on the logs themselves, as this causes the flame to cool and form soot. The log shape, size, placement, and material may be optimized to potentially impact the energy efficiency and/or energy use of products that include these design elements.

- *Improved pan burner media/bead type.* Many MGPs include an ember material that glows and radiates when heated. In pan type burners, sand is used to cover the burner and results in a flame pattern. In some products, glass beads may be used in place of simulated logs for effect. These media could potentially be selected to produce a satisfactory flame pattern while reducing the required gas consumption.
- *Reflective walls and/or other components inside combustion zone.* For MGPs that include a firebox or other enclosure, the interior walls could potentially be painted with a reflective coating. This could potentially give the illusion of more or taller flames, thereby reducing the fuel required to achieve a satisfactory aesthetic. This technology would only apply to the subset of products that include an enclosure surrounding the flame.
- *Intermittent pilot.* Intermittent pilot ignition systems are described in section III.C.1.b of this document and reduce the amount of fuel burned by the pilot when the main burner is not in use.
- *Pilot on-demand.* Pilot on-demand ignition systems are described in section III.C.1.b of this document and reduce the amount of fuel burned by the pilot when the main burner is not in use.

*Issue 6:* DOE requests comment regarding whether these technology options would impact the energy efficiency and/or energy use of MGPs. In addition, DOE requests comment on whether any other technologies are available to reduce the energy consumption of MGPs.

## 2. Screening Analysis

DOE uses the following five screening criteria to determine which technology options are suitable for further consideration in an energy conservation standards rulemaking:

(1) *Technological feasibility.* Technologies that are not incorporated in commercial products or in commercially viable, existing prototypes will not be considered further.

(2) *Practicability to manufacture, install, and service.* If it is determined that mass production of a technology in commercial products and reliable installation and servicing of the technology could not be achieved on the scale necessary to serve the relevant market at the time of the projected compliance date of the standard, then that technology will not be considered further.

(3) *Impacts on product utility.* If a technology is determined to have a significant adverse impact on the utility of the product to subgroups of consumers, or result in the unavailability of any covered product type with performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as products generally available in the United States at the time, it will not be considered further.

(4) *Safety of technologies.* If it is determined that a technology would have significant adverse impacts on health or safety, it will not be considered further.

(5) *Unique-pathway proprietary technologies.* If a technology has proprietary protection and represents a unique pathway to achieving a given efficiency level, it will not be considered further, due to the potential for monopolistic concerns.

10 CFR part 430, subpart C, appendix A, sections 6(b)(3) and 7(b).

If DOE determines that a technology, or a combination of technologies, fails to meet one or more of the listed five criteria, it will be excluded from further consideration in the engineering analysis.

DOE tentatively expects to screen out optimized air-to-fuel ratio, optimized burner report design, improved simulated log design, improved pan burner media/bead type, and reflective walls and/or other components inside combustion zone because of the potential negative impact on the aesthetics, and therefore utility, of MGPs. In contrast, DOE has tentatively determined not to screen out intermittent pilot ignition or pilot on-demand ignition.

*Issue 7:* DOE seeks comment regarding its tentative conclusion that only intermittent pilot ignition and on-demand ignition pass the screening criteria. DOE also requests comment on whether any other technology options should pass the screening analysis.

### 3. Engineering Analysis

The purpose of the engineering analysis is to establish the relationship between the efficiency and cost of MGPs. There are two elements to consider in the engineering analysis; the selection of efficiency levels to analyze (*i.e.*, the “efficiency analysis”) and the determination of product cost at each efficiency level (*i.e.*, the “cost analysis”). In determining the performance of higher-efficiency products, DOE considers technologies and design option combinations not eliminated by the screening analysis. For each product class (or in this case, each representative product group), DOE estimates the manufacturer production cost (“MPC”) for the baseline as well as higher efficiency levels. The output of the engineering analysis is a set of cost-efficiency “curves” that are used in downstream analyses (*i.e.*, the life-cycle cost (“LCC”) and payback period (“PBP”) analyses and the national impact analysis (“NIA”). In this NODA, DOE presents initial inputs and outputs for the engineering analysis and solicits relevant data and information.

#### a. Design Options

As discussed in the June 2022 RFI, DOE is considering whether a prescriptive design requirement would be appropriate for MGPs. 87 FR 35925, 35929. As noted in section III.C.2 of this document, DOE has tentatively found that only intermittent pilot ignition and pilot on-demand ignition would pass the screening criteria. For this NODA, DOE tentatively focused its initial engineering analysis on the impacts of a prescriptive design requirement that would prohibit the use of a continuous pilot or pilot on-demand, as opposed to a performance-based design standard and associated test procedure, because an intermittent pilot ignition can reduce energy consumption of MGPs as compared to continuous pilot and pilot on-demand ignition systems.

Additionally, as discussed in section III.B of this document, for this analysis, DOE has tentatively divided MGPs into four representative groups for analysis. For each of these groups, DOE identified a baseline design that represents the most energy-consumptive designs typical of that group. Specifically, for each MGP product group, DOE has tentatively identified a standing pilot ignition system as a baseline design characteristic. DOE has received feedback from stakeholders that outdoor propane heaters which are not permanently installed should not be included in its analysis because the pilot on those units are not intended to stay lit when the product is not in use. In its market research, DOE did identify propane-burning products which provided instruction to extinguish the pilot when the unit is not in use. However, DOE notes that the tentative description of standing pilots which DOE is considering for this rulemaking (as discussed in section III.C.1.b) considers a standing pilot to be a pilot which is capable of burning indefinitely until manually turned off. DOE notes that pilot systems for outdoor propane heaters which provide additional instructions to extinguish the pilot light do not match the description of an intermittent pilot because the pilot is not necessarily extinguished automatically when the main burner is shut off. Therefore, DOE has tentatively included

outdoor propane heaters in the analysis because they often include ignition systems that meet the description of standing pilots.

Additionally, for each of the four product groups, DOE conducted market research to evaluate what design options are often incorporated in conjunction with standing pilot ignition that provides basic functionality. Any components that are necessary for the product to ignite the main burner and provide the necessary functionality are included, while components that provide remote on/off functionality, variable flame height, etc. are not included. These design options are outlined in Table III.2.

**Table III.2 Baseline Design Characteristics of Each Product Group**

<b>Product Group</b>	<b>Typical Design Characteristics for Products Including Standing Pilot</b>
Indoor vented gas log sets	Standing pilot with manually-lit pilot, on/off switch, and millivolt gas valve
Other indoor vented decorative hearth products	Standing pilot with piezo ignition for pilot, on/off switch, and millivolt gas valve
Outdoor patio heaters	Standing pilot with manually-lit pilot and on/off switch
Outdoor decorative hearths	Standing pilot with piezo pilot igniter and on/off switch

*Issue 8:* DOE requests comment regarding the baseline design characteristics identified for each product group. DOE also requests comment regarding whether additional clarity is needed regarding the baseline design characteristics and the components in each design.

DOE then identified an alternative design for each product group that could reduce the energy consumption of a standing pilot light. As discussed, DOE tentatively focused its initial engineering analysis for this NODA on the impacts of a prescriptive design requirement that would prohibit the use of a continuous pilot or pilot on-demand

ignition systems. Therefore, direct main burner ignition designs and other designs that do not include pilots would not be affected by this rulemaking. The design options typically found in products that include intermittent pilot ignition and that offer similar consumer utility as comparable products with constant pilot ignition systems are listed in Table III.3 for each of the four aforementioned product groups.

**Table III.3 Design Characteristics Associated with Products that Do not Use Continuous Pilot or Pilot On-Demand**

<b>Product Group</b>	<b>Alternate Design Characteristics for Products Without Standing Pilot</b>
Indoor vented gas log sets	Intermittent pilot with electronic ignition, on/off switch, and battery backup
Other indoor vented decorative hearth products	Intermittent pilot with electronic ignition, on/off switch, and battery backup
Outdoor patio heaters	Intermittent pilot with electronic ignition and on/off switch
Outdoor decorative hearths	Intermittent pilot with electronic ignition and on/off switch

*Issue 9:* DOE requests comment regarding the alternate design characteristics identified for each product group.

b. Teardown Analysis

For the current analysis, DOE plans to use physical teardowns to estimate the cost to replace a continuous pilot with an intermittent pilot. A physical teardown is an approach wherein DOE physically dismantles a commercially available product, component-by-component, to develop a detailed bill of materials (“BOM”) for the product. The BOMs incorporate all materials, components, and fasteners (classified as either raw materials or purchased parts and assemblies, and characterize the materials and components by weight, manufacturing processes used, dimensions, material, and quantity.

DOE uses the BOMs from the teardowns as inputs to calculate the MPC for the representative product for each product type and for each ignition type discussed in

section . The materials and components in the BOMs are converted into dollar values using a computer cost model. DOE collects information on labor rates, tooling costs, raw material prices, and other factors as inputs into the cost estimates.

For this NODA, DOE has developed draft MPCs using teardowns of models from each of the for representative product groups. To compare only the cost difference between standing pilot and intermittent pilot models in each product group, DOE assessed the differences in major components including the gas valve, the pilot assembly (pilot, sparker, flame sensor, ignitor, thermocouple, etc.), the power supply, and the battery pack, as applicable. DOE did not include costs for additional features such as remote controls and accompanying remote receivers. Remote control functionality may be found more commonly on intermittent pilot ignition systems than on continuous pilot ignition systems, but are not necessary for either type of ignition system, and therefore DOE did not account for costs associated with such features.

For purchased parts, DOE estimates the purchase price based on volume-variable price quotations and detailed discussions with manufacturers and component suppliers. For parts fabricated in-house, the prices of the underlying “raw” metals (*e.g.*, tube, sheet metal) are estimated on the basis of 5-year averages to smooth out spikes in demand. Other “raw” materials, such as plastic resins, insulation materials, etc., are estimated on a current-market basis. The costs of raw materials are based on manufacturer interviews, quotes from suppliers, and secondary research. Past results are updated periodically and/or inflated to present-day prices using indices from resources such as MEPS Intl.,<sup>9</sup> PolymerUpdate,<sup>10</sup> the U.S. geologic survey (“USGS”),<sup>11</sup> and the Bureau of Labor

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<sup>9</sup> For more information on MEPS Intl, please visit: [www.meps.co.uk/](http://www.meps.co.uk/) (Last accessed Sept. 23, 2022).

<sup>10</sup> For more information on PolymerUpdate, please visit: [www.polymerupdate.com](http://www.polymerupdate.com) (Last accessed Sept. 23, 2022).

<sup>11</sup> For more information on the USGS metal price statistics, please visit [www.usgs.gov/centers/nmic/commodity-statistics-and-information](http://www.usgs.gov/centers/nmic/commodity-statistics-and-information) (Last accessed Sept. 23, 2022).



Statistics (“BLS”).<sup>12</sup> The cost of transforming the intermediate materials into finished parts is estimated based on current industry pricing.

The MPC is, in part, a function of the annual production volume since the production volume typically impacts the price the manufacture pays for sourced components. The production volumes used in this analysis are intended to reflect an average manufacturer in each product group and are shown in Table III.4.

**Table III.4 Estimated Product Volumes for MGPs**

<b>Product Group</b>	<b>Annual Production Volume</b>
Indoor vented gas log sets	8,750
Other indoor vented decorative hearth products	17,500
Outdoor patio heaters	8,750
Outdoor decorative hearths	8,750

The results of the engineering analysis performed for this NODA are shown in Table III.5. The MPCs of the “baseline design” reflect the cost to manufacture a basic design of a product that utilizes a continuous pilot in each category, while the MPC for the “alternate ignition system” reflects the MPC to manufacture an identical product that utilizes an intermittent pilot ignition system rather than a continuous pilot system. The MPC difference accounts for all design changes necessary to replace the continuous pilot system with the intermittent system.

**Table III.5 Estimated Typical Manufacturer Production Costs**

<b>Product Group</b>	<b>Baseline Design</b>	<b>Baseline MPC</b>	<b>Alternate Ignition System</b>	<b>Alternate MPC</b>
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<sup>12</sup> For more information on the BLS producer price indices, please visit: [www.bls.gov/ppi/](http://www.bls.gov/ppi/) (Last accessed Sept. 23, 2022).

Indoor vented gas log sets	Standing pilot with manually-lit pilot, on/off switch and millivolt gas valve	\$223.95	Intermittent pilot with electronic ignition, on/off switch, and battery backup	\$274.42
Other indoor decorative hearth products	Standing pilot with piezo ignition for pilot, on/off switch, and millivolt gas valve	\$340.30	Intermittent pilot with electronic ignition, on/off switch, and battery backup	\$365.80
Outdoor patio heaters	Standing pilot with manually-lit pilot and on/off switch	\$235.32	Intermittent pilot with electronic ignition and on/off switch	\$294.45
Outdoor decorative hearths	Standing pilot with piezo igniter (for lighting the pilot) and on/off switch	\$167.17	Intermittent pilot with electronic ignition and on/off switch	\$252.99

*Issue 10:* DOE seeks comment regarding the estimated MPCs for each product group. Further, DOE seeks specific cost information and data about MGP ignition system components. These components include the gas valves, the pilot assembly, the power supply, and the battery pack.

*Issue 11:* DOE seeks feedback regarding the average production volumes used in this analysis, and whether these values are representative of the MGP market.

DOE converts MPC to the manufacturer selling price (“MSP”) by multiplying by the manufacturer markup. MSP is the price the manufacturer charges its first customer, when selling into product distribution channels. MSPs include direct manufacturing production costs (*i.e.*, labor, materials, and overhead estimated in MPCs), non-production costs (*i.e.*, SG&A, R&D, and interest), and profit.

The manufacturer markup accounts for manufacturer non-production costs and profit. DOE multiplied MPCs by an industry average manufacturer markup of 1.5 to estimate MSPs.

*Issue 12:* DOE requests feedback on the industry average manufacturer markup of 1.5 and whether this value is representative of the MGP market. Additionally, DOE requests feedback on whether the average manufacturer markups varies significantly across four groups: indoor vented gas log sets, other indoor vented decorative hearths, outdoor patio heaters; and outdoor decorative hearths.

#### 4. Energy Use Analysis

The purpose of the energy use analysis is to determine the annual energy consumption of MGPs at different efficiencies in representative U.S. single-family homes, and multi-family residences, and to assess the energy savings potential of increased MGP efficiency. The energy use analysis estimates the range of energy use of MGPs in the field (*i.e.*, as they are actually used by consumers). The energy use analysis provides the basis for other analyses DOE performed, particularly assessments of the energy savings and the savings in consumer operating costs that could result from adoption of amended or new standards.

In order to estimate the energy consumption of standing pilot lights in MGPs, DOE must estimate the fraction of consumers that leave their standing pilots on all year long vs. those that shut off the standing pilot during some portion of the year. Table III.6 presents standing pilot usage data from a survey of hearth products in U.S. homes.<sup>13</sup> The average operating hours for standing pilot lights from this survey are 4593 hours per year. The survey primarily included respondents with indoor fireplaces, log sets, or stoves, although a small fraction of survey respondents had outdoor units. For outdoor decorative

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<sup>13</sup> Siap, D. et al. (2017), “Survey of Hearth Products in U.S. Homes”, Lawrence Berkeley National Laboratory. (Available at: [ees.lbl.gov/publications/survey-hearth-products-us-homes](https://ees.lbl.gov/publications/survey-hearth-products-us-homes)) (last accessed Oct. 4, 2022).

products, DOE does not have any data suggesting that standing pilot usage behavior is substantially different. For outdoor heaters, DOE assumed in the proposed and final coverage determination that standing pilot usage is 50 percent that of outdoor decorative hearth products. 87 FR 6786, 6791. For portable propane outdoor units, such as portable outdoor patio heaters, DOE assumes that standing pilots are never left on as that would quickly drain the portable tank.

**Table III.6 Standing Pilot Usage**

<b>Standing Pilot Use</b>	<b>Fraction of Consumers</b>
Always on	35%
Off when hearth is off	33%
Off in summer	32%
<b>Total</b>	<b>100%</b>

As discussed in section III.C.1.b, an on-demand pilot will turn off automatically after a certain period of time (typically one week), but not immediately after the unit is turned off. Survey data<sup>14</sup> suggest that MGP users use their products at least once a week on average during the heating season and therefore the average period between last use and automatic turn-off is one week. As a result, on-demand pilot lights operate for a similar amount of time during the heating season as standing pilots.

*Issue 13:* DOE seeks comment regarding the estimated MGP operating hours for standing pilots.

## 5. Life-Cycle Cost and Payback Period Analyses

The effect of new or amended energy conservation standards on individual consumers usually involves a reduction in operating cost and an increase in purchase cost. DOE used the following two metrics to measure consumer impacts:

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<sup>14</sup> *Id.*

- The LCC is the total consumer expense of an appliance or product over the life of that product, consisting of total installed cost (manufacturer selling price, distribution chain markups, sales tax, and installation costs) plus operating costs (expenses for energy use, maintenance, and repair). To compute the operating costs, DOE discounts future operating costs to the time of purchase and sums them over the lifetime of the product.
- The PBP is the estimated amount of time (in years) it takes consumers to recover the increased purchase cost (including installation) of a more-efficient product through lower operating costs. DOE calculates the PBP by dividing the change in purchase cost at higher efficiency levels by the change in annual operating cost for the year that amended or new standards are assumed to take effect.

In order to estimate the LCC and PBP for MGPs, DOE must estimate several input parameters including average product lifetime, repair and maintenance costs, and the distribution of different ignition types in the market.

In the February 2015 NOPR, DOE estimated that the average lifetime of MGPs was 15 years, with a minimum lifetime of 5 years and a maximum lifetime of 30 years.<sup>15</sup> This lifetime estimate was the same across all product categories. DOE continues to estimate the same average lifetime for MGPs.

In the February 2015 NOPR, DOE estimated repair costs for standing pilot lights and intermittent ignition systems.<sup>16</sup> These estimates are presented in Table III.7 and Table III.8, corrected to 2021\$ using the Consumer Price Index. Labor hours are estimated from RSMeans 2022 data.

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<sup>15</sup> See chapter 8 of the Technical Support Document for the February 2015 NOPR. (Available at: [www.regulations.gov/document/EERE-2014-BT-STD-0036-0002](http://www.regulations.gov/document/EERE-2014-BT-STD-0036-0002)) (last accessed Oct. 4, 2022).

<sup>16</sup> Id.

**Table III.7 Repair Cost Estimates**

<b>Repair Description</b>	<b>Group</b>	<b>Total Labor Hours</b>	<b>Cost</b>
Standing Pilot Ignition	Indoor Vented Gas Log Sets	1.50	\$39.10
	Indoor Other Decorative Hearth Products	1.50	\$62.40
	Outdoor Patio Heaters	1.50	\$107.73
	Outdoor Decorative Hearths	1.50	\$107.73
Intermittent Ignition	Indoor Vented Gas Log Sets	1.50	\$127.80
	Indoor Other Decorative Hearth Products	1.50	\$97.57
	Outdoor Patio Heaters	1.50	\$177.75
	Outdoor Decorative Hearths	1.50	\$177.75

**Table III.8 Labor Cost Estimates**

<b>Crew Type</b>	<b>Crew Description</b>	<b>Laborers per Crew</b>	<b>Cost per Labor-Hour</b>	
			<b>Bare Costs</b>	<b>Incl. O&amp;P*</b>
<b>Q1*</b>	1 Plumber, 1 Plumber Apprentice	2	\$37.70	\$61.50

In the February 2015 NOPR, DOE estimated that approximately 14 percent of MGPs would experience an ignition system failure over the lifetime of the product. If the failure occurred in the first year, DOE assumed that the cost was covered by warranty; if the failure occurred between 2 and 5 years, the consumer only paid labor costs; and if the failure occurred after 5 years, the consumer paid labor and material costs for the repair.<sup>17</sup> DOE continues to estimate these same repair costs for MGPs.

In order to estimate the fraction of consumers impacted by an energy conservation standard at a given efficiency level, DOE must estimate the distributions across different efficiency levels in the market. A 2017 survey on hearth products in U.S. homes found

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<sup>17</sup> *Id.*

that, at the time, most consumers had MGPs with a standing pilot, as seen in Table III.9.<sup>18</sup>

A more recent examination of models available on the market (from retailer/manufacturer websites and product literature from manufacturers of MGPs, as discussed in section III.C.1.a) shows some variation among product groupings. In particular, there are fewer of Other Indoor Vented Decorative Hearths, Outdoor Decorative Hearths, and Outdoor Patio Heaters with a standing pilot. In particular, portable propane units that fall within outdoor decorative hearths and outdoor patio heaters do not have a standing pilot as that would quickly drain the propane tank. DOE does not intend to analyze these portable propane products. The updated estimates based on DOE's recent market research are shown in Table III.10.

**Table III.9: Ignition Type Distribution in the No-New-Standards Case from 2017 Survey**

Ignition Type	Market Share
Standing Pilot	67%
Intermittent Pilot	19%
Manually-lit	14%
<b>Total</b>	<b>100%</b>

**Table III.10: Ignition Type Distribution in the No-New-Standards Case from Available Models on the Market in DOE's Current Database**

Product Group	Pilot Type by Category	Share
Indoor Vented Gas Log Sets	Intermittent or On Demand Pilot	23%
	Standing Pilot	72%
	Direct Main Burner Ignition	5%
Other Indoor Vented Decorative Hearth Products	Intermittent or On Demand Pilot	64%
	Standing Pilot	36%

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<sup>18</sup> Siap, D. et al. (2017), "Survey of Hearth Products in U.S. Homes", Lawrence Berkeley National Laboratory. (Available at: [ees.lbl.gov/publications/survey-hearth-products-us-homes](https://ees.lbl.gov/publications/survey-hearth-products-us-homes)) (last accessed Oct. 4, 2022).

	Direct Main Burner Ignition	0%
Outdoor Decorative Hearths	Intermittent or On Demand Pilot	28%
	Standing Pilot	27%
	Direct Main Burner Ignition	45%
Outdoor Patio Heaters	Intermittent or On Demand Pilot	8%
	Standing Pilot	22%
	Direct Main Burner Ignition	70%

*Issue 14:* DOE seeks comment regarding the estimated MGP lifetime, particularly if there are differences among product categories (such as indoor/outdoor products).

*Issue 15:* DOE seeks comment regarding the estimated MGP repair costs.

*Issue 16:* DOE seeks comment regarding the estimated distribution of ignition types among MGPs and the estimated fraction of products with main burners that are manually lit.

## 6. National Impact Analysis

The NIA estimates the national energy savings (“NES”) and the net present value (“NPV”) of total consumer costs and savings expected to result from new standards at specific efficiency levels (referred to as candidate standard levels).<sup>19</sup> DOE calculates the NES and NPV for the potential standard levels considered based on projections of annual product shipments, along with the annual energy consumption and total installed cost data from the energy use and LCC analyses. For the present analysis, DOE projected the energy savings, operating cost savings, product costs, and NPV of consumer benefits over the lifetime of MGPs sold from 2029-2058.

DOE evaluates the impacts of new or amended standards by comparing a case without such standards with standards-case projections (“no-new-standards case”). The no-new-standards case characterizes energy use and consumer costs for each product

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<sup>19</sup> The NIA accounts for impacts in the 50 states and U.S. territories.



class in the absence of new or amended energy conservation standards. For this projection, DOE considers historical trends in efficiency and various forces that are likely to affect the mix of efficiencies over time. DOE compares the no-new-standards case with projections characterizing the market for each product class if DOE adopted new or amended standards at specific energy efficiency levels for that class. For each efficiency level, DOE considers how a given standard would likely affect the market shares of product with efficiencies greater than the standard.

In order to estimate national impacts from 30 years of MGP shipments, DOE must project future MGP shipments for each product grouping based on historical shipments. For the February 2015 NOPR, DOE received total historical shipment data from HPBA, however these data included product categories that are not part of the current MGP analysis.<sup>20</sup> DOE notes that patio heaters were not included in the submitted shipment data. DOE received additional data from HPBA to clarify the categorization of some product groupings. From these data, DOE estimated the market shares of various product types as shown in Table III.12 . Some of these product categories do not fall under the definition of MGP, therefore the corrected market shares of MGP product categories from the shipment data is shown in Table III.12 . From these market share and historical shipment data, DOE estimates total historical MGP shipments as shown in Table III.13. DOE notes that outdoor portable propane units are included in these market share estimates and requests comment on their market share, so that they may be excluded from the analysis.

**Table III.11 : Market Share of Product Categories from Submitted Shipment Data**

Product Type	Market Share
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<sup>20</sup> See chapter 9 of the Technical Support Document for the February 2015 NOPR. (Available at: [www.regulations.gov/document/EERE-2014-BT-STD-0036-0002](http://www.regulations.gov/document/EERE-2014-BT-STD-0036-0002)) (last accessed Oct. 4, 2022).

Vented Fireplace	50.4%
Unvented Fireplace	4.1%
Vented Stove	4.1%
Unvented Stove	0.5%
Vented Insert	7.2%
Unvented Insert	0.2%
Vented Gas Log	6.7%
Unvented Gas Log	20.1%
Outdoor Units (Excluding Patio Heaters)	6.7%
<b>Total</b>	<b>100.0%</b>

**Table III.12 : Market Share of MGP Product Categories Estimated from Previous Data**

<b>Product Group</b>	<b>Market Share</b>
Indoor Vented Gas Log Sets	8.2%
Indoor Other Decorative Hearth Products	75.8%
Outdoor Patio Heaters	7.8%
Outdoor Decorative Hearths	8.2%
<b>Total</b>	<b>100.0%</b>

**Table III.13: Estimated Historical Shipments of MGPs**

<b>Year</b>	<b>Total Historical Shipments of MGPs</b>
2005	1,338,749
2006	1,029,272
2007	892,789
2008	621,562
2009	365,983
2010	385,108
2011	334,687
2012	345,119
2013	464,216
2014	319,885

2015	412,812
2016	379,017
2017	416,992
2018	406,917
2019	377,377
2020	395,499
2021	455,259

A more recent examination of models available on the market (from retailer/manufacturer websites and product literature from manufacturers of MGPs) based on DOE's current market database (as discussed in section III.C.1.a) shows some variation from the above market shares. These market shares are shown in Table III.14. DOE again notes that outdoor portable propane units are included in these market share estimates and requests comment on their market share, so that they may be excluded from the analysis.

**Table III.14: Market Share Breakdown of MGP Product Groups in Current Database**

<b>Product Group</b>	<b>Market Share</b>
Indoor Vented Gas Log Sets	48%
Other Indoor Vented Decorative Hearth Products	6%
Outdoor Patio Heaters	8%
Outdoor Decorative Hearths	38%

*Issue 17:* DOE seeks comment regarding the estimated shipments of MGPs and the market shares of different MGP product categories. In particular, DOE requests comment on the market share of portable propane outdoor units so that they may be excluded from the analysis.

## 7. Manufacturer Impact Analysis

The purpose of the manufacturer impact analysis (“MIA”) is to identify and quantify the impacts of any potential new and/or amended energy conservation standards on manufacturers. DOE conducts the MIA in three phases, and further tailors the analytical framework based on the comments it receives. In Phase I, DOE creates an industry profile to characterize the industry and identify important issues that require consideration. In Phase II, DOE prepares an industry cash-flow model and considers what information it might gather in manufacturer interviews. In Phase III, DOE’s contractors interview manufacturers and assesses the impacts of standards both quantitatively and qualitatively.

As part of DOE’s rulemaking process, DOE’s contractors reached out to MGP manufacturers to conduct confidential manufacturer interviews in 2022. The interviews covered a range of topics, including manufacturer key concerns, technology options, production costs, conversion costs, financial metrics, market shares, shipment levels, manufacturer markup, and competitive concerns. Given the sensitive nature of these topics, the interviews were conducted under nondisclosure agreement with DOE’s contractors to ensure attributable data and sensitive business information was maintained as confidential. Only aggregate information was provided to the Department. DOE’s contractors conducted interviews with manufacturers that sell product in each of the groups: indoor vented gas log sets, other indoor decorative hearth products, outdoor patio heaters, and outdoor decorative hearths. The interviews provided broadest coverage of indoor vented gas log set manufacturers. The interviews included manufacturers that account for 39% of indoor vented gas log sets models in the DOE-compiled product database.

## **IV. Public Participation**

### *A. Submission of Comments*

DOE will accept comments, data, and information regarding this NODA no later than the date provided in the **DATES** section at the beginning of this document.

Interested parties may submit comments, data, and other information using any of the methods described in the **ADDRESSES** section at the beginning of this document.

*Submitting comments via [www.regulations.gov](http://www.regulations.gov).* The [www.regulations.gov](http://www.regulations.gov) webpage will require you to provide your name and contact information. Your contact information will be viewable to DOE Building Technologies staff only. Your contact information will not be publicly viewable except for your first and last names, organization name (if any), and submitter representative name (if any). If your comment is not processed properly because of technical difficulties, DOE will use this information to contact you. If DOE cannot read your comment due to technical difficulties and cannot contact you for clarification, DOE may not be able to consider your comment.

However, your contact information will be publicly viewable if you include it in the comment itself or in any documents attached to your comment. Any information that you do not want to be publicly viewable should not be included in your comment, nor in any document attached to your comment. Otherwise, persons viewing comments will see only first and last names, organization names, correspondence containing comments, and any documents submitted with the comments.

Do not submit to [www.regulations.gov](http://www.regulations.gov) information for which disclosure is restricted by statute, such as trade secrets and commercial or financial information (hereinafter referred to as Confidential Business Information (“CBI”)). Comments submitted through [www.regulations.gov](http://www.regulations.gov) cannot be claimed as CBI. Comments received through the website will waive any CBI claims for the information submitted. For information on submitting CBI, see the Confidential Business Information section.

DOE processes submissions made through *www.regulations.gov* before posting. Normally, comments will be posted within a few days of being submitted. However, if large volumes of comments are being processed simultaneously, your comment may not be viewable for up to several weeks. Please keep the comment tracking number that *www.regulations.gov* provides after you have successfully uploaded your comment.

*Submitting comments via email, hand delivery/courier, or postal mail.* Comments and documents submitted via email, hand delivery/courier, or postal mail also will be posted to *www.regulations.gov*. If you do not want your personal contact information to be publicly viewable, do not include it in your comment or any accompanying documents. Instead, provide your contact information in a cover letter. Include your first and last names, email address, telephone number, and optional mailing address. The cover letter will not be publicly viewable as long as it does not include any comments

Include contact information each time you submit comments, data, documents, and other information to DOE. If you submit via postal mail or hand delivery/courier, please provide all items on a CD, if feasible, in which case it is not necessary to submit printed copies. No telefacsimiles (“faxes”) will be accepted.

Comments, data, and other information submitted to DOE electronically should be provided in PDF (preferred), Microsoft Word or Excel, WordPerfect, or text (ASCII) file format. Provide documents that are not secured, that are written in English, and that are free of any defects or viruses. Documents should not contain special characters or any form of encryption and, if possible, they should carry the electronic signature of the author.

*Campaign form letters.* Please submit campaign form letters by the originating organization in batches of between 50 to 500 form letters per PDF or as one form letter

with a list of supporters' names compiled into one or more PDFs. This reduces comment processing and posting time.

*Confidential Business Information.* Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via email two well-marked copies: one copy of the document marked "confidential" including all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

It is DOE's policy that all comments may be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).

*B. Issues on Which DOE Seeks Comment*

*Issue 1:* DOE requests comment on its tentative decision to exclude gas lights and portable propane products from the current analysis. DOE also requests comment on an appropriate definition for gas lights in order to distinguish them from other miscellaneous gas products. DOE also requests comment on whether any other products should be excluded from the current rulemaking.

*Issue 2:* DOE requests comment regarding these four representative product groups.

*Issue 3:* DOE requests comment on the OEMs identified for each representative group: indoor vented gas log sets; other indoor vented decorative hearths; outdoor patio heaters; and outdoor decorative hearths. Additionally, DOE requests data on the number of OEMs with domestic production facilities for each group. DOE also requests comment on names of OEMs of MGPs that DOE did not identify in Table III.1.

*Issue 4:* DOE seeks comment regarding whether there are any ignition methods that are not captured in this section, or if any of the listed methods are not applicable to MGPs. DOE also seeks comment on whether the above descriptions for each ignition method accurately reflect the industry's understanding.

*Issue 5:* DOE seeks comment regarding whether there are any pilot light technologies that are not captured in this section, or if any of the listed technologies are not applicable to MGPs. DOE also requests comment about any subsets of MGPs in which it would not be feasible to implement the aforementioned technologies. DOE also seeks comment on whether the above descriptions for each pilot light technology accurately reflect the industry's understanding. Finally, DOE seeks comment on the potential combinations of ignition systems and pilot lights that are available on the market, and on the prevalence of these combinations in each product group.

*Issue 6:* DOE requests comment regarding whether these technology options would impact the energy efficiency and/or energy use of MGPs. In addition, DOE requests comment on whether any other technologies are available to reduce the energy consumption of MGPs.

*Issue 7:* DOE seeks comment regarding its tentative conclusion that only intermittent pilot ignition and on-demand ignition pass the screening criteria. DOE also requests comment on whether any other technology options should pass the screening analysis.

*Issue 8:* DOE requests comment regarding the baseline design characteristics identified for each product group. DOE also requests comment regarding whether additional clarity is needed regarding the baseline design characteristics and the components in each design.

*Issue 9:* DOE requests comment regarding the alternate design characteristics identified for each product group.



*Issue 10:* DOE seeks comment regarding the estimated MPCs for each product group. Further, DOE seeks specific cost information and data about MGP ignition system components. These components include the gas valves, the pilot assembly, the power supply, and the battery pack.

*Issue 11:* DOE seeks feedback regarding the average production volumes used in this analysis, and whether these values are representative of the MGP market.

*Issue 12:* DOE requests feedback on the industry average manufacturer markup of 1.5 and whether this value is representative of the MGP market. Additionally, DOE requests feedback on whether the average manufacturer markups varies significantly across four groups: indoor vented gas log sets, other indoor vented decorative hearths, outdoor patio heaters; and outdoor decorative hearths.

*Issue 13:* DOE seeks comment regarding the estimated MGP operating hours for standing pilots.

*Issue 14:* DOE seeks comment regarding the estimated MGP lifetime, particularly if there are differences among product categories (such as indoor/outdoor products).

*Issue 15:* DOE seeks comment regarding the estimated MGP repair costs.

*Issue 16:* DOE seeks comment regarding the estimated distribution of ignition types among MGPs and the estimated fraction of products with main burners that are manually lit.

*Issue 17:* DOE seeks comment regarding the estimated shipments of MGPs and the market shares of different MGP product categories. In particular, DOE requests comment on the market share of portable propane outdoor units so that they may be excluded from the analysis.

## **V. Approval of the Office of the Secretary**

The Secretary of Energy has approved publication of this notification of the availability of the preliminary technical support document and request for comment.

**Signing Authority**

This document of the Department of Energy was signed on November 7, 2022, by Francisco Alejandro Moreno, Acting Assistant Secretary for Energy Efficiency and Renewable Energy, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the *Federal Register*.

Signed in Washington, DC, on November 10, 2022.

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Treena V. Garrett,  
Federal Register Liaison Officer,  
U.S. Department of Energy.

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